IN THE CLAIMS:

1. (currently amended) A method for rapidly generating a signal at an output frequency for use in a communication device comprising:

providing a reference signal at a reference frequency to a first signal synthesizer configured to generate a first signal at a first frequency;

generating the first signal with the first signal synthesizer;

processing the first signal to reduce harmonic cross-coupling thereby creating a processed first signal;

providing the reference signal at the reference frequency to a second signal synthesizer configured to generate a second signal at a second frequency;

generating the second signal with the second signal synthesizer;

processing the second signal to reduce harmonic cross-coupling thereby creating a processed second signal;

providing the processed first signal and the processed second signal to a switch;

responsive to a control signal;

selectively switching the ~~a~~ switch to output from the switch either the processed first signal or the processed second signal to create a switch output signal; ~~and~~

after switching either the processed first signal or the processed second signal from the switch and for every switching by the switch, shifting the frequency of the switch output signal to thereby generate a frequency specific signal at a different frequency; and

outputting the frequency specific signal on a single output without the frequency specific signal passing through any switches after the shifting of the frequency, wherein selectively switching the switch to output from the switch either the processed first signal or the processed second signal is the only switching when producing the frequency specific signal.

2. (original) The method of Claim 1, wherein the first signal synthesizer and the second signal synthesizer comprises phase locked loops or delay locked loops.

3. (original) The method of Claim 1, wherein processing the first signal and the second signal to reduce harmonic cross-coupling comprises limit or buffer processing.

4. (original) The method of Claim 3, wherein limit or buffer processing comprises converting a sinusoidal signal to a signal more closely resembling a square wave signal.

5. (previously presented) The method of Claim 1, wherein shifting comprises modifying the frequency of the signal output from the switch in proportion to the ratio of the output frequency to either the first frequency or the second frequency.

6. (original) The method of Claim 1, further comprising one or more additional signal synthesizers configured to generate one or more additional signals at one or more additional frequencies.

7. (original) The method of Claim 1, wherein the first signal synthesizer and the second signal synthesizer generate signals at frequencies in addition to the first frequency and the second frequency.

8. (currently amended) A method for generating an output signal at one or more output frequencies comprising:

generating a first signal at a first frequency;

generating a second signal at a second frequency;

limit processing at least one of the first signal and the second signal to reduce cross-coupling to generate one or more limit processed output signals;

providing the one or more limit processed output signals to a switch;

selectively outputting, based on switch operation, at least one limit processed output signal received from the switch to a frequency modification module;

for each and every switch operation changing the modification of the frequency of the signal output from the switch with the frequency modification module to create a frequency modified signal; and

outputting the frequency modified signal on a single output and wherein the switch is the only switch in producing the frequency modified signal. ~~without the frequency modified signal passing through any switches after exiting the frequency modification module and wherein the only switch operation is from the switch operation that outputs from the switch into the frequency modification module.~~

9. (original) The method of Claim 8, wherein the first frequency and the second frequency are non-integer multiples.

10. (previously presented) The method of Claim 8, wherein limit processing comprises converting a sinusoidal type signal to a square wave signal.

11. (original) The method of Claim 10, wherein the limiting function comprises converting a sinusoidal signal to a signal resembling a square wave signal.

12. (original) The method of Claim 8, wherein the frequency modification module does not modify the frequency of both the first signal and the second signal.

13. (previously presented) The method of Claim 8, wherein the frequency modification module modifies the frequency of the first signal by an amount different than the amount of modification to the frequency of the second signal or a limit processed version of the second signal.

14. (currently amended) A system for generating an output signal, wherein the output signal is capable of being switched between two or more output frequencies, the system comprising:

two or more signal generators configured to generate two or more signals, wherein each signal is at a different frequency;

one or more multiplier, dividers, or both configured to receive at least one of the two or more signals and process the at least one signal to create a first signal at a first frequency or a second signal at a second frequency such that the second frequency is a non-integer multiple of the first signal;

a switch configured to receive at least two signals of the two or more signals and responsive to a control signal output a switch output comprising one of the two or more signals; and

a frequency modification device configured to receive the switch output after switching and modify the frequency of the switch output to a desired output frequency to create an output signal, wherein for every change in the switch output a frequency modification change also occurs, wherein an additional switch is not present after the frequency modification device and the system utilizes only one switch.

15. (original) The system of Claim 14, wherein the two or more signal generators generate signals that are at frequencies that are non-integer multiples.

16. (previously presented) The system of Claim 14, further comprising a controller configured to generate one or more control signals wherein the control signals synchronize switch output with frequency modification device operation and such synchronization forces a change in the frequency modification for every change in switch output.

17. (original) The system of Claim 14, wherein the different frequencies of the two or more signals are selected to minimize cross-coupling between the two or more signals.

18. (original) The system of Claim 14, wherein the amount of frequency modification performed on a signal is directly proportional to the frequency of a signal and a desired output frequency.

19. (original) The system of Claim 14, further comprising a limiter configured to modify the two or more signals prior to switching to reduce cross-coupling between the two or more signals within the switch.

20. (original) The system of Claim 19, wherein two or more signals generated by the two or more signal generators comprise non-square wave signals and the limiter converts a signal to format more closely approaching a square wave signal.

21. (original) The system of Claim 14, wherein the output signal is for use as a local oscillator signal in a wireless communication device.

22. (currently amended) A system for rapidly switching the frequency of an output signal between a third frequency and a fourth frequency comprising:

a switch configured to receive a first signal at a first frequency and a second signal at a second frequency and responsive to a control signal output either of the first signal or the second signal;

a frequency modification device configured to, responsive to a control signal, increase or decrease the frequency of a signal output from the switch to either the third frequency or the fourth frequency wherein for every change in switch output, an increase or decrease in the frequency of a signal output from the switch occurs to create a frequency modified signal; and

a controller configured to provide a control signal to the switch and the frequency modification device to thereby synchronize which signal is output from the switch with frequency modification device operation;

an output configured to output the frequency modified signal, and wherein the switch is the only switch in the system. ~~such that a switch is not located between the frequency modification device and the output, and wherein the switch is the only switch in the system.~~

23. (original) The system of Claim 22, wherein the frequency modification device comprises a frequency multiplier configured to multiply a received signal by a value necessary to modify the frequency of the received signal to either the third frequency or the fourth frequency.

24. (original) The system of Claim 22, further comprising one or more limiters configured to modify at least one input to the switch to thereby reduce cross-coupling between the first signal and the second signal.

25. (original) The system of Claim 22, wherein the first frequency and the second frequency are selected to reduce cross-coupling between signals and the system is embodied in an integrated circuit.

26. (original) The system of Claim 22, wherein the ratio between the first frequency and the second frequency is a non-integer value.

27. (original) The system of Claim 22, further comprising at least one signal generator configured to generate the first signal, the second signal, or both, and

wherein the controller is further configured to provide a control signal to at least one signal generator to control which frequency is generated.